

REMARKS

In this response to the second Office Action in the application, no claims have been amended, no claims have been added, and no claims have been cancelled. Claims 1 through 25 remain pending in the application.

In the Office Action, the Examiner allowed Claims 12 and 17. The Examiner noted that the subject matter of Claims 2, 4 - 11, 13 - 16, 18 - 20, and 22 - 24 is allowable, and that those claims would be allowable if rewritten to include all the limitations of the base claim and any intervening claims. The claim allowance and recognition of allowable subject matter is acknowledged, with appreciation.

The Examiner rejected Claims 1, 3, 21, and 25 under 35 U.S.C. 102(b) as anticipated by U.S. Patent No. 4,888,247, to Zweben et al. The rejection of Claims 1, 3, 21, and 25 under 35 U.S.C. 102(b) is respectfully traversed.

The Examiner commented that Zweben is directed to low-thermal-expansion, heat conducting laminates having layers of metal and reinforced polymer matrix composite. The Examiner commented that the layer(s) of metal disclosed by Zweben can be in the form of a sheet, film, or foil, and the Examiner took the position that the layer of metal disclosed by Zweben can be equated to Applicants' "elongate generally planar detectable ply". Metals disclosed by Zweben as being useable for the laminate are "aluminum, copper, silver, nickel, titanium, iron, gold, tin, beryllium, magnesium, lead, and various alloys such as iron-nickel, iron-nickel-cobalt". The Examiner further took the position that the layer of polymer matrix composite material disclosed by Zweben can be equated to Applicants' "first and second

generally planar plies”. The Examiner noted that the polymer matrix composite material disclosed by Zweben can be in the form of particles, powders, whiskers, fibers, woven fabrics, non-woven mats, or any other woven or non-woven form of fiber or any combination of the foregoing.

The Zweben patent is directed to laminates for use as heat transferring substrates in the form of plates, boards, or heat sinks for electronic components, and the teaching of that patent is directed toward the specific and limited purpose of providing a composite material that will conduct and dissipate heat while maintaining a low coefficient of thermal expansion. As discussed in, e.g., column 1, lines 26 through 48, of the Zweben reference, the problem addressed by that reference is the separation and failure of electronic components from adjacent components as a result of movement of those components relative to each other and to the substrate, especially movement due to differences in expansion and contraction in response to temperature changes. It is clear that the Zweben purpose is to provide a rigid structure for the very specific purpose of resisting dimensional change due to expansion and contraction to the greatest possible extent while effectively conducting and dissipating heat. It is also clear from the Zweben disclosure and teaching that the sole purpose of the metallic component is thermal conductivity. As stated by Zweben in column 6, line 12, et seq., “Any metal or metal alloy which can be formed into a thin sheet, foil or film, which can be bonded to the polymer matrix composite materials of the present invention; and which transfers or conducts heat, can be used in the laminates, devices and methods of the present invention.” The Zweben patent includes no disclosure or teaching whatsoever relating to, or even suggesting, magnetic detectability. Neither magnetism nor

detectability is referred to in any context.

In direct contrast, Claim 1 of the present application recites “an elongate generally planar detectable ply formed of magnetically detectable material”, and Claim 21 recites “magnetic detection means formed of magnetically detectable material”. Clearly, detectability in general, and magnetic detectability in particular, is a significant characteristic of the detectable ply element of Claim 1 and the magnetic detection means element of Claim 21. Applicants argue that the Zweben patent must include disclosure or teaching of the entirety of the claimed subject matter to justify its use as an anticipatory reference under 35 U.S.C. 102(b). Applicants further argue that Zweben not only fails to directly disclose or teach magnetic detectability, but fails to make even a veiled suggestion of it. The teaching of the Zweben reference actually leads those of skill in the general field of laminates away from the concept of magnetic detectability, because the predominant teaching of the reference is to the use of non-magnetic metals. Although iron is mentioned as one of the many metals that can be used within the scope of the Zweben teaching, there is no teaching or suggestion that iron is a favored metal. Indeed, the Zweben reference suggests that iron is a non-favored metal in comparison to non-magnetic metals such as aluminum and copper, which exhibit more favorable properties for the Zweben purpose and are referred to much more frequently in the disclosure.

Zweben makes no more than a passing reference to the use of iron as the metallic element in the disclosed laminate composition, and, as noted above, the disclosure of iron along with other metals is based solely on thermal conductivity. With no disclosure or teaching regarding magnetism or detectability in the reference, the position that the reference

anticipates the rejected claims is necessarily based on the premise that the claimed characteristic of magnetic detectability is inherent in the Zweben disclosure. Disclosure or teaching of magnetic detectability cannot be properly read into or deemed to be inherent in the Zweben reference on the mere possibility that a metallic component that might be used in accordance with the Zweben disclosure might be magnetically detectable. It is well established that the possibility, or even the fact, that a certain characteristic or result may occur is not sufficient to establish the inherency of that characteristic or result. (See, e.g., *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).) Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. (See, e.g., *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).) The inherency of a characteristic or result in a prior art reference can be properly established only if the characteristic or result necessarily flows from the teaching of that reference. (See, e.g., *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).) Magnetic detectability is not only not a necessary result of the Zweben teaching, it is an unlikely result of that teaching.

Not only must the claimed characteristic or result necessarily result from the teaching of the prior art reference, it must be recognized as such by persons of ordinary skill. Applicants suggest that no person of ordinary skill would take a prior art disclosure of the use of thermally conductive metals in a heat sink for purposes of heat dissipation as equivalent to a disclosure of the use of a magnetically detectable ply or of magnetic detection means in a structural reinforcement device for the purpose of magnetic detectability. Since

the substantial majority of the heat sink compositions disclosed by Zweben could not exhibit the characteristic of magnetic detectability, it is not reasonable to suppose that a person of ordinary skill would even consider that characteristic in the context of Zweben. Accordingly, Applicants' respectfully assert that the Zweben reference wholly fails to satisfy the requirements to support a finding of anticipation under 35 U.S.C. 102(b), and that Claims 1 or 21 are allowable over Zweben.

Further, since there is not even a vague suggestion of detectability in the Zweben reference, a person of ordinary skill would not be lead by that reference toward an exploration of detectability in any other prior art reference. Any impetus for exploration of the prior art for magnetic detectability in the context of a composite structure such as that claimed by Applicants would arise only from knowledge of Applicants' disclosure and claims, and not from the prior art at the time Applicants' invention was made.

The Examiner also rejected Claims 3 and 25 under 35 U.S.C. 102(b) as being anticipated by Zweben. Claim 3 is dependent under Claim 1, and recites that the detectible ply of Claim 1 comprises a thin sheet of ferrous metal. Claim 25 is dependent under Claim 21, and recites that the magnetic detection means of Claim 21 comprises a ply of magnetically detectable material bonded to at least one of the faces of the body. Each of these dependent claims includes all the elements and limitations of the respective base claim. Both of Claims 3 and 25 therefore relate specifically to detectability; a characteristic or result that is neither directly disclosed by Zweben, even remotely suggested by Zweben, nor inherent in Zweben, as demonstrated above. Because, as Applicants have shown, Claims 1 and 21 are not anticipated by and are allowable over Zweben, and because each of Claims

3 and 25 further limits an allowable base claim, Claims 3 and 25 are allowable. Notwithstanding, Applicants respectfully assert that in any event Claims 3 and 25 are not themselves anticipated by Zweben and are allowable over that reference even without reliance on the allowability of the respective base claim.

With regard to Claim 3, Applicants' acknowledge that Zweben discloses the use of iron within the structure of the heat sink composite, and Applicants' acknowledge that iron is a ferrous metal. However, it does not necessarily follow that the inclusion of iron in the structure disclosed by Zweben results in magnetic detectability of the iron within the heat sink structure in any reasonable and meaningful context. The Zweben reference teaches that the amount and relative proportion of metal in the composition may be small, and Zweben further teaches the encapsulation of the metal within the interior of the structure. Zweben discloses that metal foils suitable for use in the heat sink may be as little as 0.05 mm (0.0019 inch) in thickness. Zweben also teaches that more than one type of metal may be used in the composition. Therefore, even when iron is used as a thermally conductive metal in the Zweben structure, the iron, and thus the structure, may not be magnetically detectable by any means that would be employed by a person of ordinary skill in any field relevant to either Zweben or to Applicants' invention, even if such a person had any reason to attempt to detect it. As pointed out above, it is not a sufficient basis for rejection under 35 U.S.C. 102(b) that following the teaching of Zweben might produce the result disclosed and claimed by Applicants, especially when the Zweben reference contains no teaching whatsoever to even remotely suggest that magnetic detectability could be a characteristic of the heat sink structure. Applicants also respectfully suggest that it is inappropriate to base rejection on

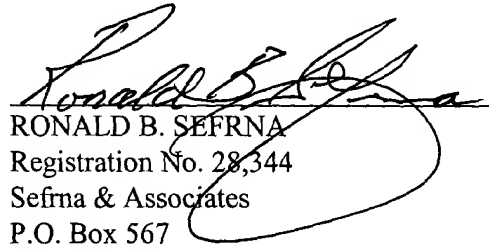
the assumption that any minute quantity of iron would be detectable by some means, employed by a person of ordinary skill in some unrelated field of art. The pertinent inquiry is rather whether a person of ordinary skill in the relevant field of art would be lead to attempt to magnetically detect the Zweben structure, using means within the scope of the ordinary skill of that person, and if so, would necessarily detect the structure using that means. The significant majority of the compositions taught by Zweben would not have any characteristic of magnetic detectability, and so could not be magnetically detected even if there were any suggestion of a reason that one might want to attempt to do so. Claim 3 is directed specifically to magnetic detectability and to the use of a thin sheet of ferrous metal for that specific purpose. Accordingly, Claim 3 is not anticipated by anything disclosed by or inherent in Zweben, and is allowable over Zweben.

Claim 25 not only does not recite “iron” or “ferrous” metal, it recites the bonding of a ply of magnetically detectable material to one of the faces of the body element of the composite structure. In the structure recited by Claim 25, the detectable material is the outer ply or layer comprising the structure. Zweben teaches encapsulation or enclosure of the metallic component in the interior of the heat sink structure, not as the outer layer. Zweben, therefore, teaches a physical or mechanical structure that differs significantly from the structure recited by Claim 25, and thus teaches away from the structure of Claim 25. Further, as demonstrated above, Zweben makes no reference to or suggestion of magnetic detectability, but only a mention of iron as one of many possible thermally conductive materials. Claim 25 does not include any recitation of “iron” or “ferrous” metal, but is written in terms of magnetic detectability. In view of the structural or mechanical differences

pointed out above, in addition to the silence of the Zweben reference regarding magnetic detectability, the Zweben reference has no relevance to Claim 25.

In view of the foregoing, Applicants believe that all grounds for rejection under 35 U.S.C. 102(b) have been addressed and overcome, and that the allowability of Claims 1, 3, 21, and 25 has been clearly demonstrated. In view of the allowability of the remaining claims of the application, Applicants believe that all claims of the application are allowable and in condition for allowance. Accordingly, Applicants request that this amendment be entered, and that all claims pending in the application be allowed. No new matter has been added, and no additional filing fee is seen to be due.

Respectfully submitted,



RONALD B. SEFRNA
Registration No. 28,344
Sefrna & Associates
P.O. Box 567
Tyler TX 75710-0567
(903) 592-5965 - Telephone
(903) 592-5901 - Fax

ATTORNEY FOR APPLICANTS